

THE RUHR

With 30 colour plates

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THE RUHR

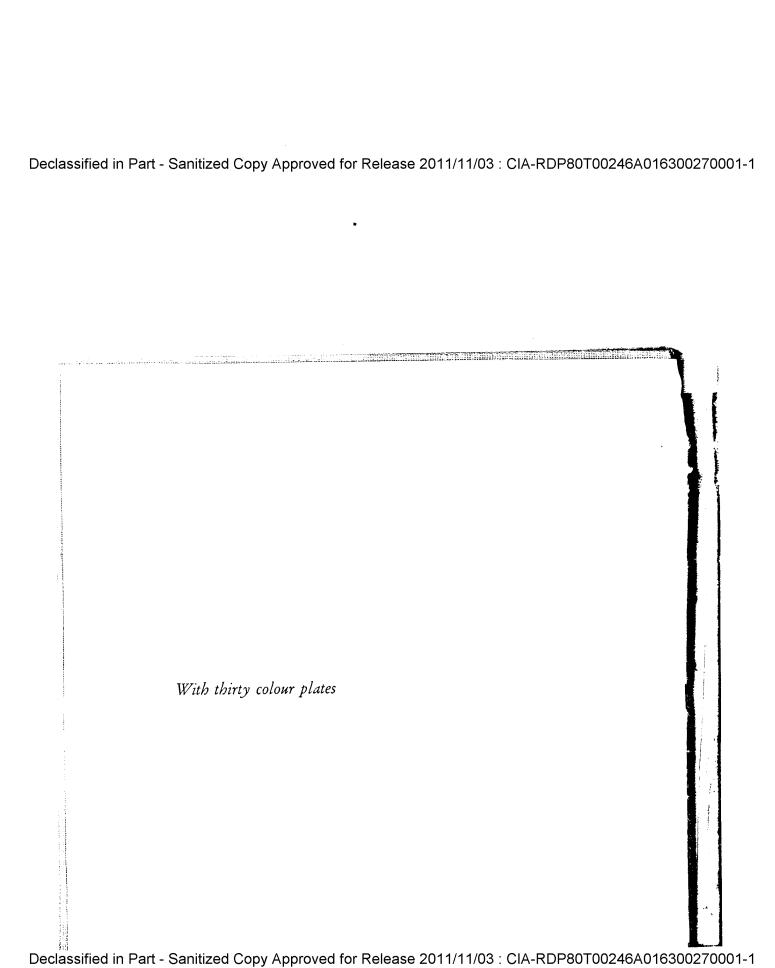
With 30 colour plates

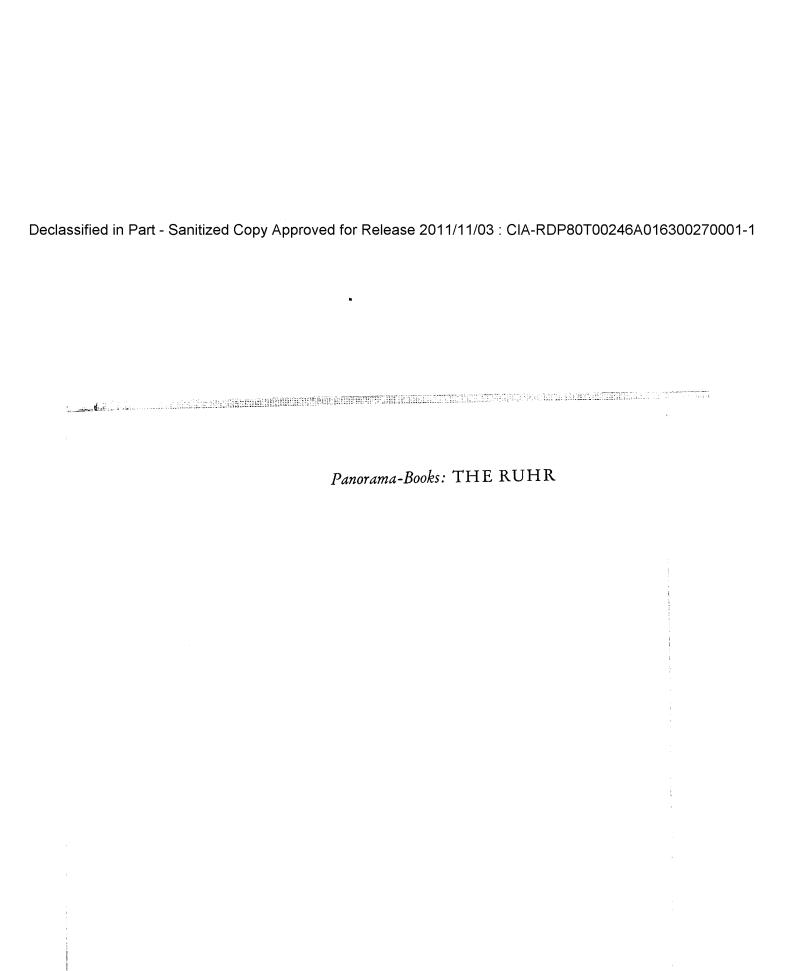
The Ruhr presents many aspects, for it is a region pulsating with life and hence is subject to constant changes. Coal, steel, the chemical industry and, last but not least, man have endowed this industrial region with its own peculiar character and appearance. But this is only one aspect of the Ruhr Valley. There are also others, — the natural beauty-spots which this region possesses and preserves.

Arno Wrubel has captured the diversity of the Ruhr in his thirty colour plates, which, together with the Introduction by Jürgen Eyssen, give us a true picture of Germany's greatest industrial area.

THE RUHR

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ARNO WRUBEL

THE RUHR

Introduction by

JÜRGEN EYSSEN

Translated by Gladys Wheelhouse

MUNICH

WILHELM ANDERMANN VERLAG

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Smoothly and steadily the plane flies its course on the route from Berlin to Düsseldorf. "Ladies and gentlemen, we have just passed over Bielefeld and the Teutoburg Forest." Shortly afterwards, a mass of buildings, one next to the other, appears on the horizon to the west; railway tracks branch out to form the many-stranded tangle of a large siding; and we catch a glimpse of the first collieries and factories, which, seen from this height, look like boxes of toys. We have reached the Ruhr Valley.

Beneath us, bathed in a grey and murky red light, a vast sea of houses extends as far as the distant horizon, – industrial plants as large as medium-sized towns, and, as far as the eye can see, the intricate network of the railway lines, the arterial roads like grey ribbons, interspersed by blast-furnaces, shafts and smoking chimney-stacks, canals, harbour basins with numerous cranes and quays stretching for miles. Here and there, a few lighter patches stand out among this vast sea of grimy houses like green islands, – the last remains of the large tracts of woodlands which, together with the many farms, as recently as 150 years ago gave this region the appearance of a purely agricultural area. It was coal which completely changed the aspect of the landscape and turned the industrial district or "coal pot", as it is humorously and fondly called by the natives, into the most densely populated area in the whole of Europe. And it is still coal which today directly or indirectly provides most of the inhabitants of this region with a livelihood.

More than 40 per cent of the working population are employed in the mining industry. It provides more than one million persons, including their dependents, with their daily bread. In mining towns such as Bottrop or Gladbeck, for instance, 90 per cent of the population derive their means of living from this industry, and the people of the industrial district know only too well that the pulse of economic life depends in no small measure on the international market

value of the "black diamond". In spite of the advance of oil, that new international major power, coal still remains and will, in the future, too, continue to remain the leading raw material and source of energy.

Here, coal is omnipresent: whether hidden from sight in the darkness of the shafts underground, or visible on the tips, where, day and night, it is loaded onto trucks and barges. Indeed, coal is in the air, in the truest sense, as any housewife in the Ruhr Valley will tell you, for even on fine days the soot manages to penetrate through closed windows. And when the weather is damp, it mingles with the fumes of the chemical industry and forms a dense grey pall which envelops the entire district.

The industrial district which is the subject of this book is practically identical with the boundaries of the Ruhr Settlement Union, founded in 1920, and covers an area of approximately 1,770 square miles. It is bounded in the south by the river from which it has derived its name, and in the west borders on the banks of the Rhine. Following the underground coal reserves it has expanded in the north across the River Emscher as far as the Lippe, whilst in the east it already extends as far as Hamm.

Since time immemorial there have been settlements in the Ruhr Valley. Even in the Ice Age men lived and hunted here. And the fact that there were settlements here in the Stone and Bronze Ages has been proved by countless finds, – implements, weapons and jewellery. The Romans then built a military road along the Lippe into free Germania. And the legions of Varus marched along this road to their defeat in the Teutoburg Forest. After the collapse of the Roman Empire, the Franks invaded the country, bringing with them Christianity. They extended the "Hellweg", a mule-track which had already been used in earliest times, and transformed it into a trade route between the Rhine and the Weser. By way of protection they set up a number of fortified villages along

this route and these later grew into towns, such as, for example, Duisburg, Mülheim, Essen and Dortmund. In the year 799, St. Liudger, Bishop of Münster, founded the Benedictine Abbey of Werden, which rapidly became a centre of intellectual life in the Middle Ages. The "Heliand", a religious poem in Old High German, based on the gospel, is said to have been written here in the 9th century. For hundreds of years the monks here treasured as the most valuable possession in their library the famous "Codex argenteus", the Bible translation by the Gothic Bishop Ulfila, which now adorns the University library in Uppsala. In the neighbouring town of Essen a convent for the daughters of the aristocracy was founded about 850, which during the reign of the Emperor Otto was conducted by the Abbesses Mathilde and Theophanu, themselves members of the imperial family. Costly relics of its minster – the processional crosses, set with precious stones and ornamented in enamel, and the "golden" Madonna – still bear witness to its fame and importance in those days.

Further eastwards, Dortmund in the 12th and 13th centuries enjoyed its first era of economic prosperity. The only free imperial town between Cologne and Bremen, Dortmund was a member of the Hanseatic League. It traded with towns as far away as Bruges, London and Visby, where a merchant from Dortmund was even entrusted with the task of looking after the key to the "strongbox", the coffer containing the riches of this commercial centre of Gotland, which were stored in St. Mary's Church. Dortmund had its own right of mintage and was a chartered city, and its high court of justice enjoyed considerable prestige throughout Westphalia. The highest of the "secret" vehmic courts likewise convened within the walls of the town. Its debtors even included the Kings of England, and the Emperor of the Holy Roman Empire regarded the wealth of this industrious trading centre with envious eyes. And this was

no doubt the reason why he promised the Archbishop of Cologne that he would obtain the "town of Dortmund with its freedom, shire, with the court, with the Jews and with all the privileges and rights that the rich in Dortmund have". But it was the Thirty Years' War that was to put an end to the wealth of the town and of its inhabitants.

It seemed as though the golden age of this region was over for good; in reality, however, it had not even dawned. It once more changed hands and passed from one ruler to another. In 1614 the last Duke of Cleves died. After a lengthy dispute as to the right of succession, the principalities of Cleves, Mark and Ravensberg, as well as the region known today as the Ruhr Valley, came under the rule of the Great Elector of Brandenburg. In 1655 he presented the new territories which he had acquired with a university in Duisburg. It was transferred to Bonn in 1818. And the fact that the only university which has ever existed in the Ruhr Valley was transferred elsewhere, should no doubt be regarded as something more significant than merely an act of administration. For it was not book-learning but hard work and untiring manual skill which was to rouse this region from its state of dormancy and make it a vital part of the economic activity of our century.

Which brings us back to the subject of coal, – the greatest treasure of the Ruhr Valley and the factor which has decided its fate. About three million years ago, the seams of coal, which today traverse the entire region as huge ranges, were formed from the bogs and swampy forests of the Stone Age. In the south the layers of coal are close to the surface, but towards the north they dip at an angle of about two to three degrees from the horizontal. The layers of sand, limestone and marl which cover them gradually increase to a height of about 3,000 feet. It has been estimated that more than 50 milliard tons of coal can still be raised from the deposits in the Ruhr Valley, a figure which indicates that

this region is likely to have reserves for another three to four hundred years. Coal has been raised in the Ruhr Valley since the Middle Ages. At least, this fact is first mentioned in a chronicle of the year 1317. The earliest enterprises, which confined themselves to raising the reserves that were close to the surface, were small and seldom numbered more than twelve men. In their "main profession" the miners tilled a small plot of land and regarded "digging for coal" as a profitable side line. "He works several hours in the morning", so an eyewitness reports in the 18th century, "as far as his strength allows, removes everything without discrimination until he finds coal and then applies himself to his domestic work again in the afternoon." Even today, the "Kotten", a small holding of one's own, is highly prized by the miners, and the so-called "Prummenkötter", or old-established small holders, occupy a special status in the hierarchy of the mining profession.

The small pits of those days had naturally not a large output, not even when the method of building galleries was resorted to in order to get at the coal reserves. It was only after the invention of the steam engine that a decisive revolution took place in the development of the mining industry. It was now possible to cut through the layers of marl, which contained a large amount of water and covered the high-grade bituminous coal seams. After various experiments, Franz Haniel, one of the pioneers of mining in the Ruhr district, was the first to raise coal from a depth of three hundred feet at his "Crown Prince" pit in Essen-Borbeck in 1839. A further important step towards the industrialization of this region was the first successful coking of Ruhr coal in the year 1849. Now, one "could let the ore come to the coal", – in other words, a profitable iron industry could be set up next to the pits.

The problem of transportation was solved by the invention of the railway. The first zone of this new industrialization lay in the region of the old "Hell-

weg". And this fertile agricultural area was soon transformed into a purely industrial district. The small rural towns of Duisburg, Essen, Bochum and Dortmund, which had become practically insignificant, now became centres of a new, tempestuous development.

By the 1850's and 1860's the industrialization was already spreading as far as the Emscher lowlands. This fen-country, which consisted mainly of marshy woodlands, had so far been the haunt of large numbers of wild horses. Now, however, the heavy industry seized possession of it. The fact that there were few towns and villages in this sparsely populated region facilitated the founding of large concerns, which thanks to the completion of the Cologne to Minden railway in 1847 immediately had all the necessary transportation facilities at their disposal. Hence, in the course of a few decades large towns such as Hamborn, Oberhausen and Gelsenkirchen sprang up. Settlement of these towns took place at a speed that was almost "American". Gelsenkirchen, in 1847 a village with seven hundred inhabitants, developed into a town with a population of 400,000. Oberhausen, which in 1847 was only a remote railway station in the middle of a heath, became one of the most important centres of the heavy industry and today has a population of 250,000. The Emscher, once a wild, meandering river, now carries the waste-water of the industrial district. The Rhine-Herne Canal, a main artery of the Ruhr district, runs parallel to its levelled course. Further to the north is the Lippe industrial area with its important centre. Recklinghausen. Huge collieries are located in this area, which is also the scene of one of the most interesting town-planning experiments of our day. The young double town of Marl-Hüls, which has developed round two collieries and a chemical concern, known all over the world, has profited by the bitter experience of its southerly neighbours on the Emscher. The rapid and, in fact, over-hasty development of these towns prevented a systematic town-planning.

In order to save the workers time and distance, the housing settlements were built round the various factories and collieries. Of course, no one ever dreamt that these individual settlements would some day be joined together to form large towns. Today, the authorities responsible for town-planning are endeavouring to transform these wild growths into an organic unity and are trying to graft the vital traffic, administrative and cultural centres into them. In Marl, on the other hand, planning is already looking a hundred years ahead. Famous architects from all over the world are being commissioned in order to establish the architectonic focal points of this city of the future from the very outset. A huge town hall is being built on the plans designed by the famous Finnish architect Aalto, and the modern municipal hospital and the "Island", an adult education centre, fitted with all the latest technical innovations, have become models for similar projects in neighbouring and more distant areas.

The rapid development and expansion of the industrial district would never have been possible without the dynamic energy of great personalities in the field of enterprise. True, even in its early days, when its great natural reserves had not yet been fully exploited, this region already provided private initiative with an extensive field of activity; but the trends which made themselves felt in world industry and economics at the close of the 19th century made the demand for far-sighted personalities, who would amalgamate the numerous individual enterprises into big, crisis-proof concerns, run on uniform lines, even more imperative. As was only natural, this storm and stress period of the Ruhr industry brought with it many conflicts and, indeed, many fierce economic and social clashes. In our day, when we are perhaps able to judge things in retrospect more objectively than the contemporaries of that period, the "grand old men" of the Ruhr industry are beyond the reach of the hatred and favour of parties and conflicting interests. Names such as Alfred Krupp, August

Thyssen, Emil Kirdorf, Friedrich Springorum, Hugo Stinnes and Albert Vögler have become legendary.

We should like to mention in brief the life of one of these industrial pioneers, Friedrich Grillo (1825-1888), which is perhaps typical of the greatness and also of the hybrid nature of this much spurned era of company-promoting. As a young man, Grillo, who came of a good middle-class family of merchants in Essen, was one of the first to endeavour to amalgamate the loosely organized private interests of individual entrepreneurs into large industrial groups linked together. Within the short space of eight years, he established a colliery company, added a rolling mill, a wire drawing mill and a rod mill to it, and set up an iron foundry and a boiler works. These were followed by a chemical works, a glass and mirror factory, as well as a gas and water works. The necessary capital was provided by his own private bank. Thus, his achievements between the years 1865 and 1873 provided an example - long before its time of the most modern form of industrial amalgamation. But his efforts did not end here. Assisted by his co-workers and a building company which he had founded himself, Grillo proceeded to erect a whole town, the district of Gelsenkirchen now known as Schalke, complete with streets, dwellings, schools, a church and a hospital. But his life of creative achievement ended under tragic and macabre circumstances. Grillo, whose last project had been concerned with the financing of a mental home, himself became mentally deranged and died in the asylum at Grafenberg.

But to return to the present! Today, the industry and economy of the Ruhr Valley rest solidly on the two pillars of the coal mining industry and the iron and steel industry. To these may be added a number of other important branches of industry, of which the chemical industry in particular plays a leading part. The modern system of associated companies has led to a combination and

interlacing of the various industrial branches, in order, on the one hand, to secure the necessary raw materials and sources of energy for the large concerns of the heavy industry and, on the other hand, to keep prime costs as low as possible. Since the founding of the European Coal and Steel Community, a supranational union of the coal and steel industry which includes the six states of Belgium, the Federal Republic of Germany, France, Italy, Luxembourg and the Netherlands, the Ruhr Valley has become the heart of Europe's industry, too.

Technical progress during the past decades has led to a rationalization of mining and processing methods such as one would never have dreamt of in the 19th century. The days when the colliers used to cut and break down the coal with a pick and shovel are long past and over. Where local conditions permit, the modern pits are completely mechanized. Hewing and cutting machines eat their way into the coal seams, and conveyor belts ensure rapid transport. Whereas formerly whole tracts of woodland were felled to provide pit-props, serial production of hydraulic stemples, which ensure greater safety and a further mechanization of the mining process, has now been introduced. But in spite of all these technical improvements in mining methods and working conditions, the miners underground are still exposed to the deadly danger of the incalculable forces of Nature. And even in the 20th century, the traditional miner's greeting, "luck to you!", has lost none of its profound significance.

What mechanization is to mining, automation is to the iron industry. One only needs think of the modern, completely automatic rolling mills. The hall itself in which the long-range controlled rolling machines are lined up one behind the other, has an area of hundreds of square yards. Exactly synchronized in speed, they operate as if worked by an invisible hand. On one side red-hot bars of steel are fed into the huge plant, to emerge on the other side as sheets

ready for processing. The hall is deserted except for a couple of men up in the glass control-tower, which resembles the bridge on an ocean liner, who watch the continuous movement of this steel tapeworm. They regulate its progress by merely pressing a switch on their control-board. All these technical rationalization measures have led and will continue to lead to an increase in capacity and output.

But let statistics speak for themselves! With an output of over 120 million tons the Ruhr Valley provides the major part of the hard coal and coke production of the Federal Republic of Germany. It supplies 80 per cent of the gas used throughout the country. More than 20 million tons of crude steel, that is to say 81 per cent of the total production of West Germany, are obtained from its blast-furnaces. And similar figures apply in the case of other branches of industry. Who, for instance, is aware of the fact that every other window-pane is made in the Ruhr Valley; what housewife knows that the jars which she buys for bottling fruit have come from this region; and what wine-lover realizes that the bottle from which he has just filled his glass was manufactured in the Ruhr Valley?

The steel making industry of the Ruhr Valley is equally important. This industrial region produces engines, slewing cranes, excavators, steel bridges and so forth, and it specializes above all in the erection of complete industrial plants. Thus, the erection of the steel works in Rourkela (India) within a couple of years has once more given proof of the capacity of the Ruhr industry. Nowadays, it is more or less part of the unwritten etiquette of every state visit for a long column of cars to drive over from Bonn in order to inspect one of the modern factories in the Ruhr Valley. And there is no doubt a certain amount of truth in the statement that to many of the crowned and uncrowned potentates of the young countries the journey to Bonn is merely a route which they

cannot avoid in order to reach their real destination, the Ruhr Valley, from whose economic strength they hope to obtain an invigorating stimulus for their own country, either in the form of a sizable loan or a consignment of high-grade industrial products.

But neither enterprise, initiative nor technical rationalization alone would have sufficed to make the Ruhr Valley the manysided and ramified economic organism that it is today. The factors which determined the industrial character of this region were, above all, man, his manual skill, his industriousness and his inventiveness. Thus, the huge and voracious appetite of industry for human beings - during the past hundred years the population has increased fifteenfold – turned the Ruhr Valley into the biggest melting-pot of peoples in Europe. Up to the middle of the last century, labour was recruited mainly from the neighbouring regions of Westphalia, the Rhineland and Hessen. But by 1860 these reserves were exhausted, and agents were now sent to East Germany in order to recruit workers there. Year by year, trains bearing workers from East and West Prussia, from Upper and Lower Silesia arrived in the Ruhr district, and by 1907, 500,000 persons from East Prussia alone had made their home here. They swarmed, above all, into the rapidly growing industrial towns in the Emscher district. Gelsenkirchen, for instance, at the beginning of the 20th century was jokingly called "Little Ortelsburg" by the new arrivals. It was round about this time, too, that workers began to be recruited from foreign peoples, from the Poles, the Czechs and the Slovenes. They were settled mainly in the industrial district around Recklinghausen. After the last war, volunteers were even transplanted from sunny Italy, Spain and Greece to the grimy, smoky air of the industrial region of the Ruhr Valley. The various national and social tensions which naturally resulted from this transfer process are now practically non-existent. A uniform type of population is developing more and

more. The grandchildren of Hans Kaluscheit of Gumbinnen and of Jan Sobtschak of Katowice today speak the same dialect, - "Ruhr German", which is a mixture of Westphalian, East German, Yiddish and other foreign elements. This language has a robust, graphic quality and often reveals a grim determination, prompted by a certain laziness of speech, to slur several words together and form new ones, which to a stranger seem interminable: as, for instance, "Kannzewatt" instead of "kannst du das" ("can you do that"), or "kunsemadennda" for "gucken Sie mal den da!" ("just look at him!"). Wilhelm Herbert Koch, a journalist and native of this district, has made an amusing study of the dialect spoken by his fellow-countrymen, of their everyday conversations either at the pit-head or whilst playing cards at the "local". With his inseparable pair, "Anton" and "Cervinski", both of them miners, he has created two types of the Ruhr Valley who enjoy as great a popularity as "Tünnes" and "Schääl", the two Cologne types. And the anecdote in which Anton gets annoyed with his colleague from Saxony, who, returning from work, in a poetic mood talks about the "fiery vapour that belches forth from the chimneys", is typical of the unadorned realism of this dialect which shuns all "fine" words. It is a language that has something solid, firm and practical about it, - like the practical common sense which is so characteristic of the people of this region. They know what their work is worth, - whether they are miners or skilled workers in some big factory or other. During the past forty years the structure of the industrial working class has most certainly undergone a change. The standard of living has improved considerably and the difference between the classes is less marked. The television masts on the houses and the crowded parking lots in front of the collieries and factories are eloquent proof of this fact.

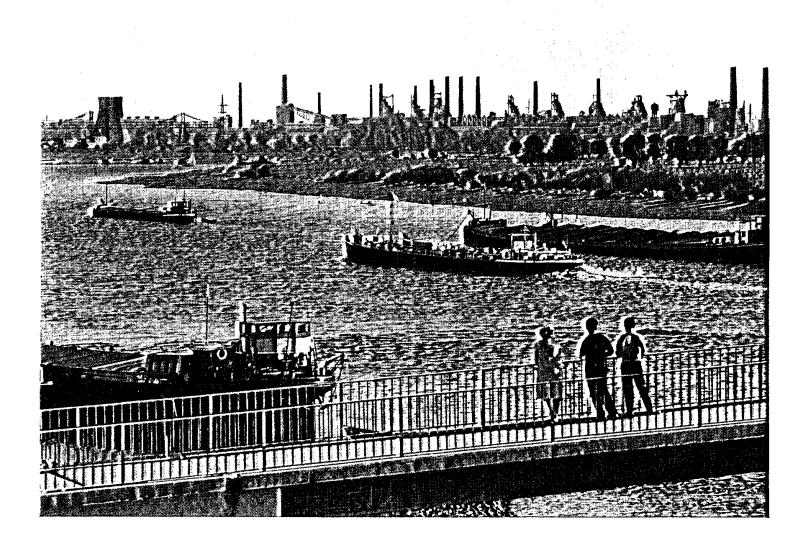
With the gradual reduction of working-hours and the introduction of a

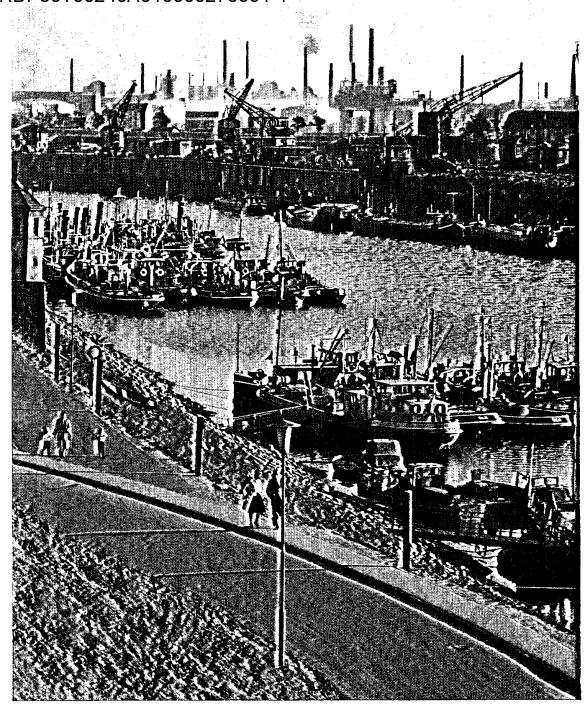
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Blick uber den Khein auf Hutten- und Industriewerke

Blick uber den Khein auf Hutten- und Industriewerke View of Foundries and Factories from the Rhine Bridge Vue du Rhin avec des fonderies et des industries



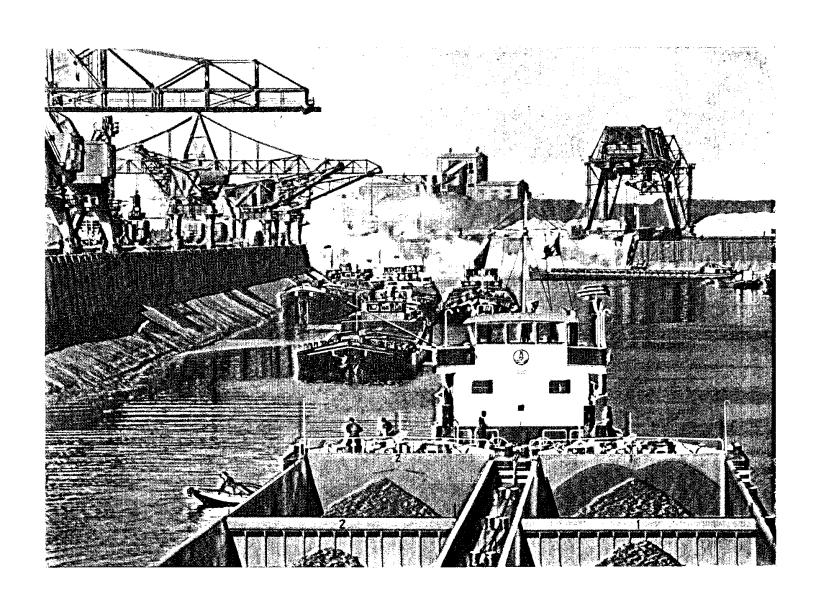


Duisburger Hafen Duisburg Port Le port de Duisbourg

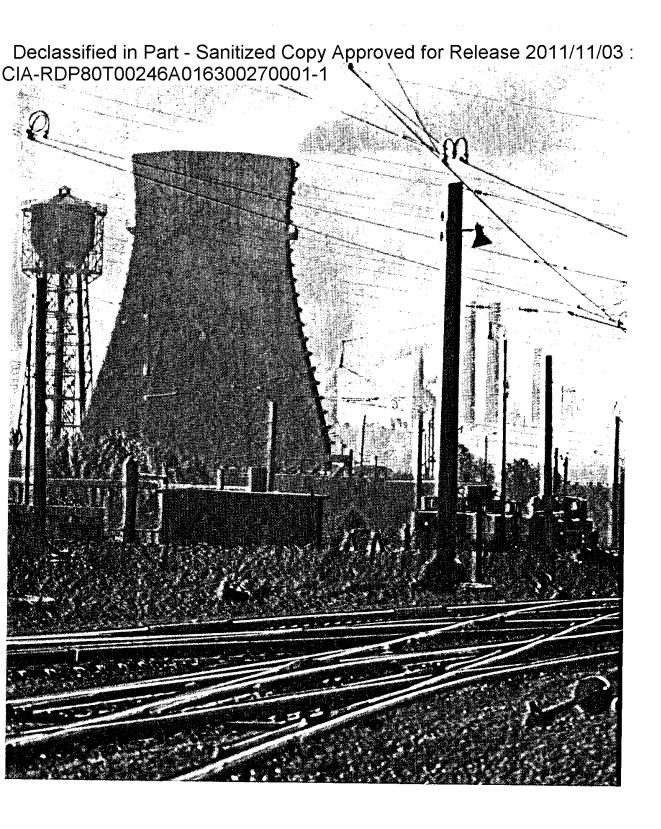
am Rhein-Herne-Kanal Petroleum Rejinery on the Rhine-Herne-Canal Raffinerie de pétrole au canal Rhin-Herne

Kraftwerk und moderne Zeche Power Station and Modern Colliery Usine motrice et mine moderne

Im Erzhafen The Ore Harbour Port de minerai







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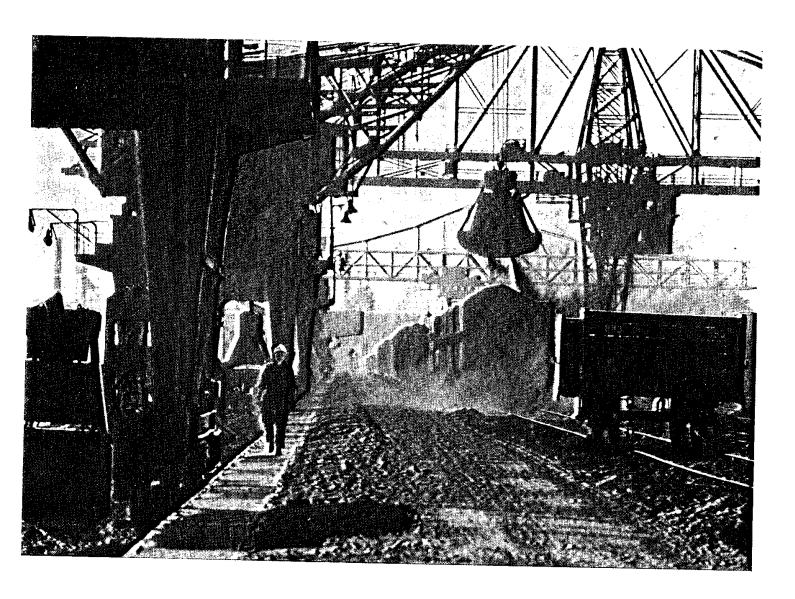
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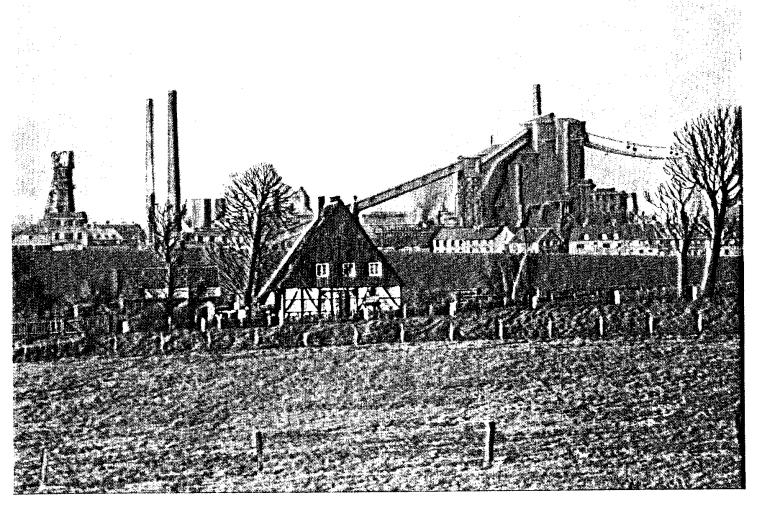
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A Cooling-Tower Tour de refroidissement

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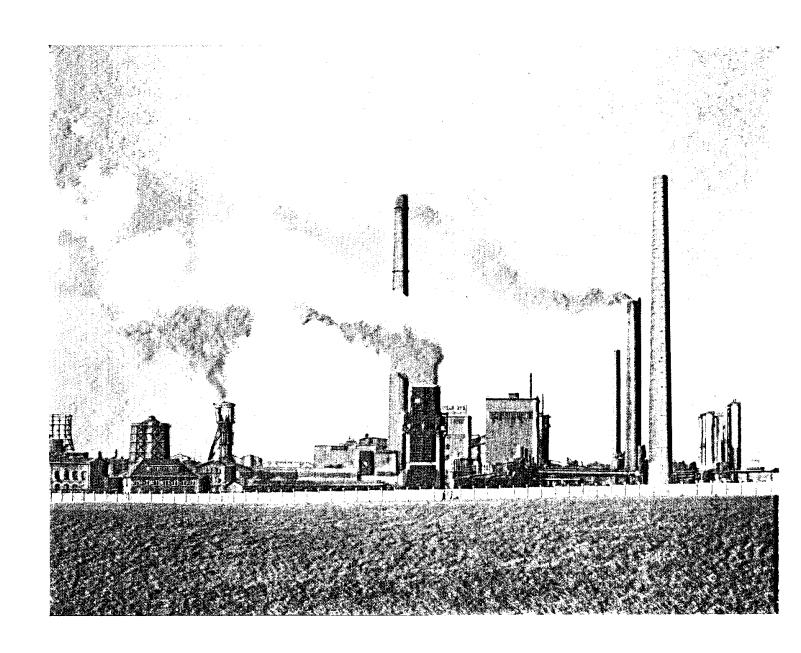
Erz- und Kohleverladung Loading Ore and Coal Chargement de minerai et de charbon

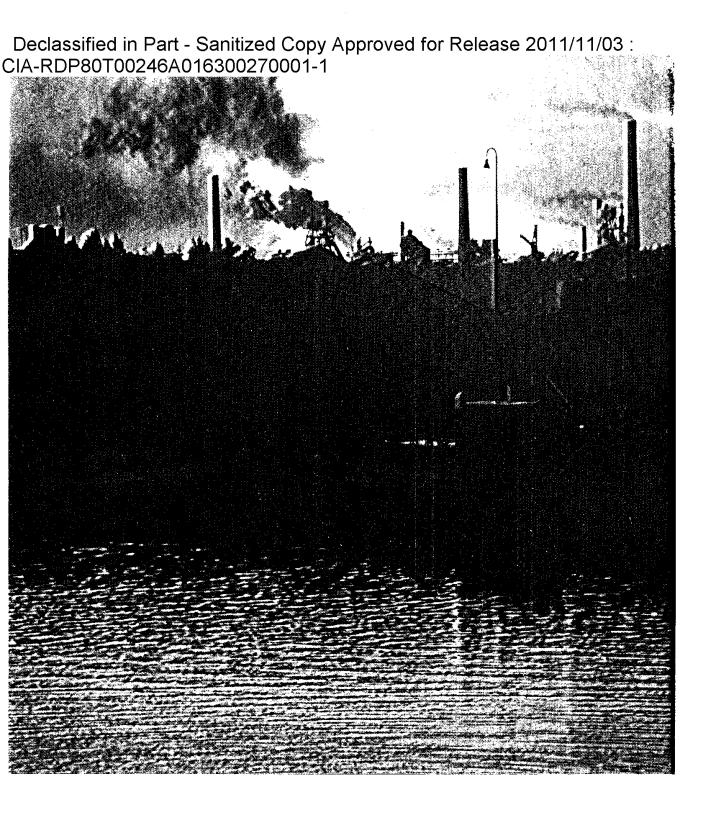




Bauernhaus im Revier A Farm-House in the midst of Industry Ferme de la région

Zechenanlage A Colliery Plant Installation minière





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Tap-Hole in a Blast-Furnace

Coucher de soleil sur le port de Duisbourg

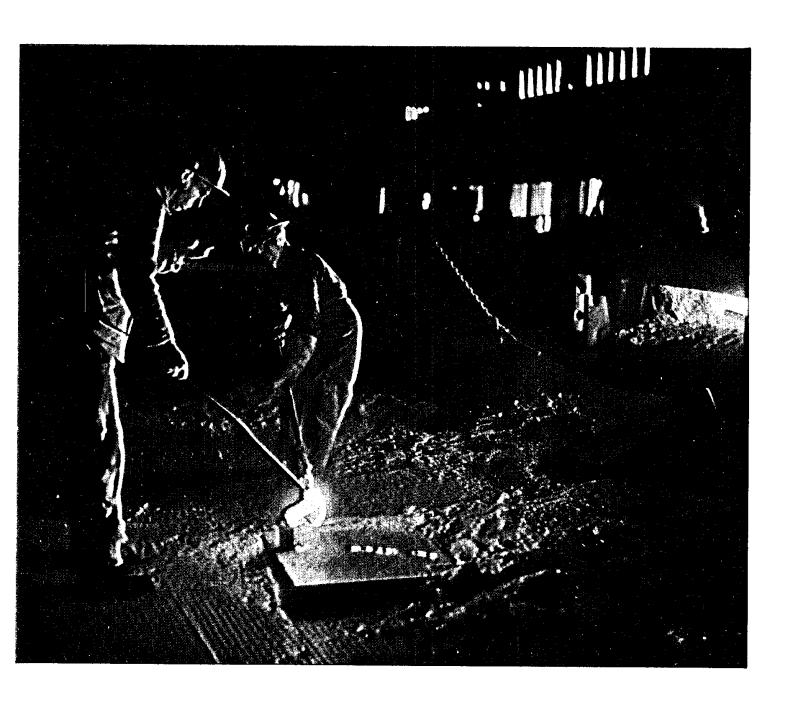
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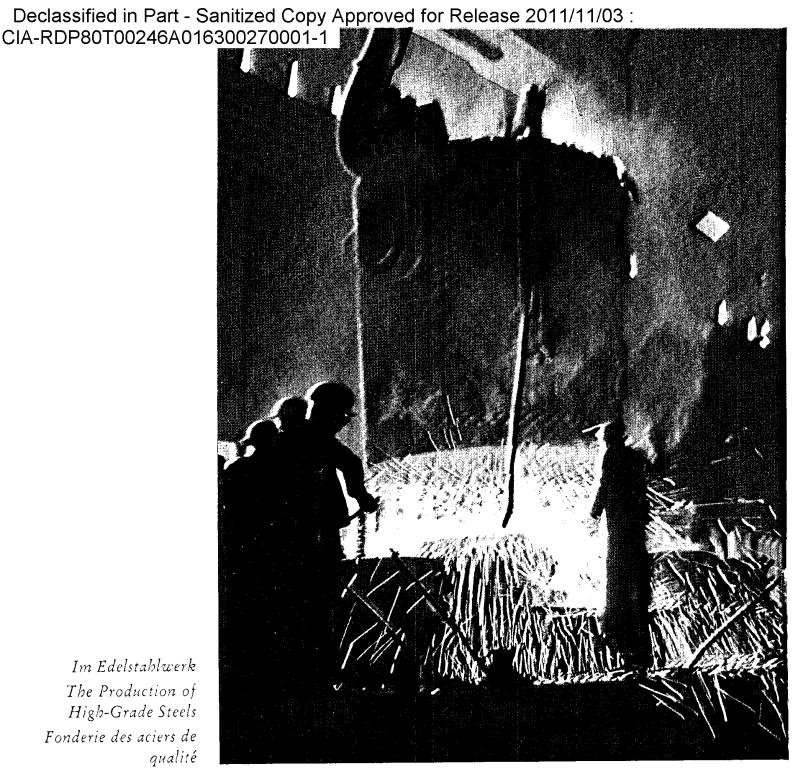
Vue partielle d'un haut-fourneau



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Essai de matériau à la fonderie électrique d'acier





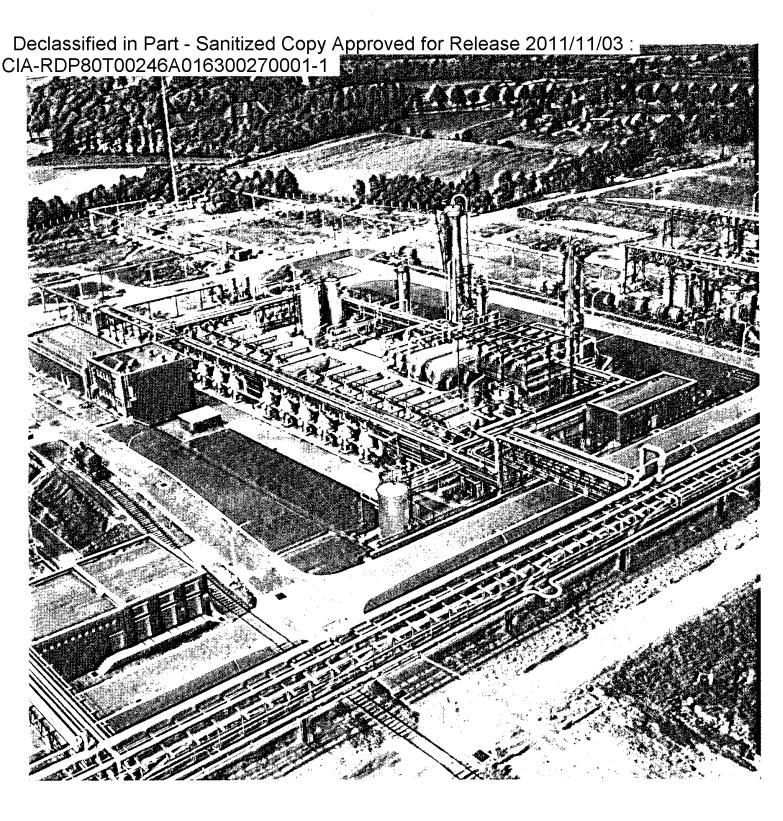
Im Edelstahlwerk The Production of High-Grade Steels Fonderie des aciers de qualité

Walzenstraße A Rolling Mill Laminoir

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Hüttenwerk bei Nacht A Foundry by Night Une fonderie, la nuit

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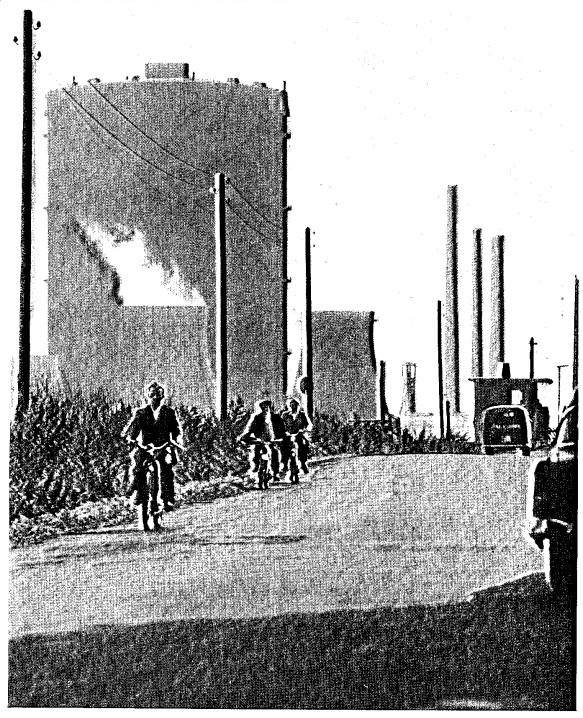


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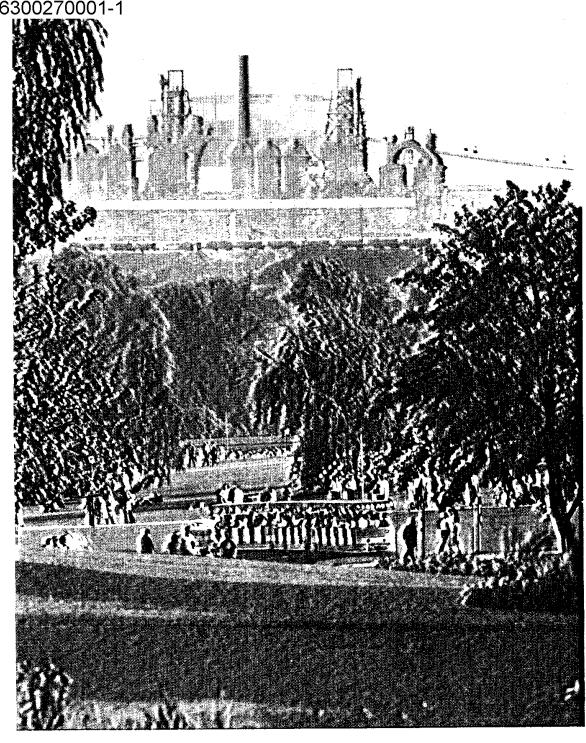
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Dach
A Chemical Works with
Outdoor Apparatuses
Usines chimiques;
installations en plein air

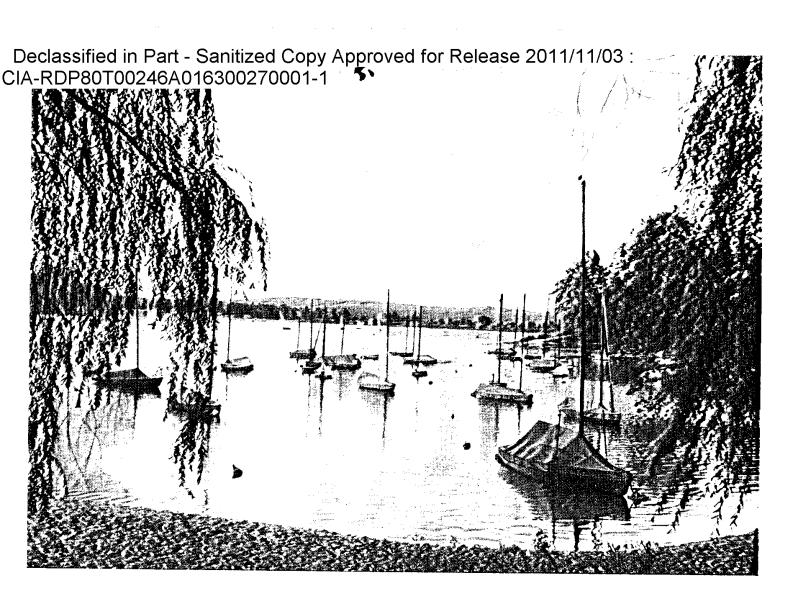
Herstellung von
synthetischem Kautschuk
A Synthetic Rubber
Factory
Fabrication de
caoutchouc synthétique



Straße im Revier A Street in the Industrial Area Paysage minier



Parkanlage in Dortmund A Park in Dortmund Parc à Dortmund



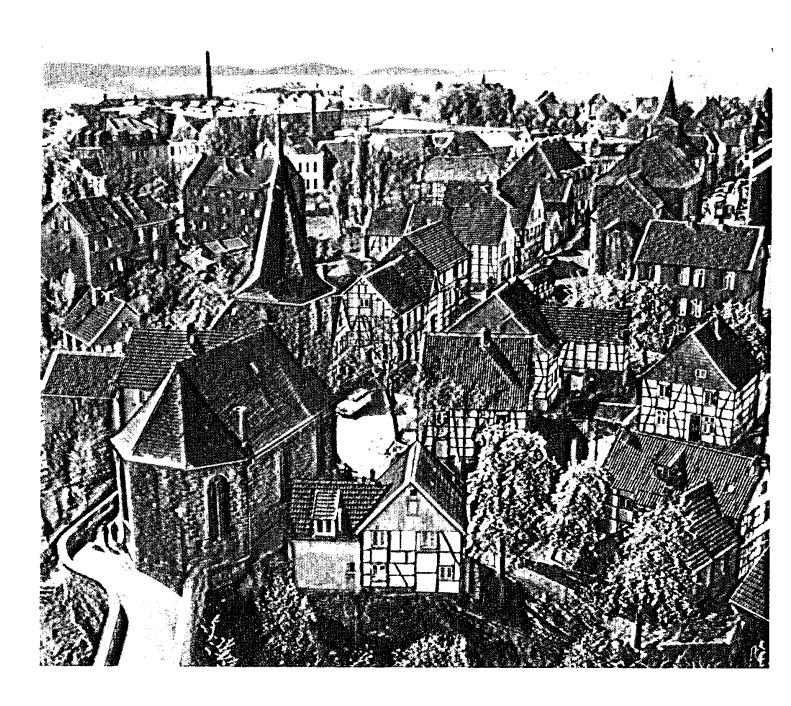
Am Halterner See Lake Haltern Lac Halterner

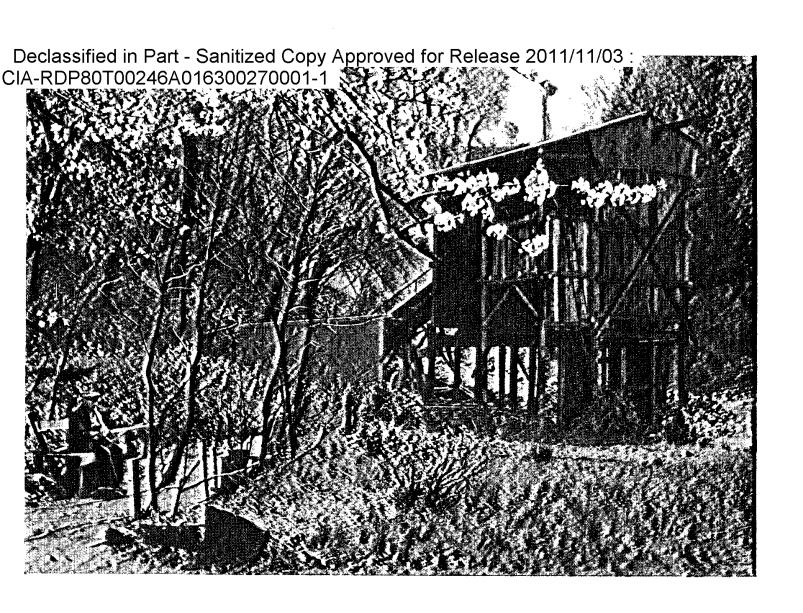
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Blankenstein, ein altes Städtchen im Ruhrtal

Blankenstein, ein altes Städtchen im Ruhrtal The Old Town of Blankenstein in the Ruhr Valley Blankenstein, petite bourgade de la Ruhr





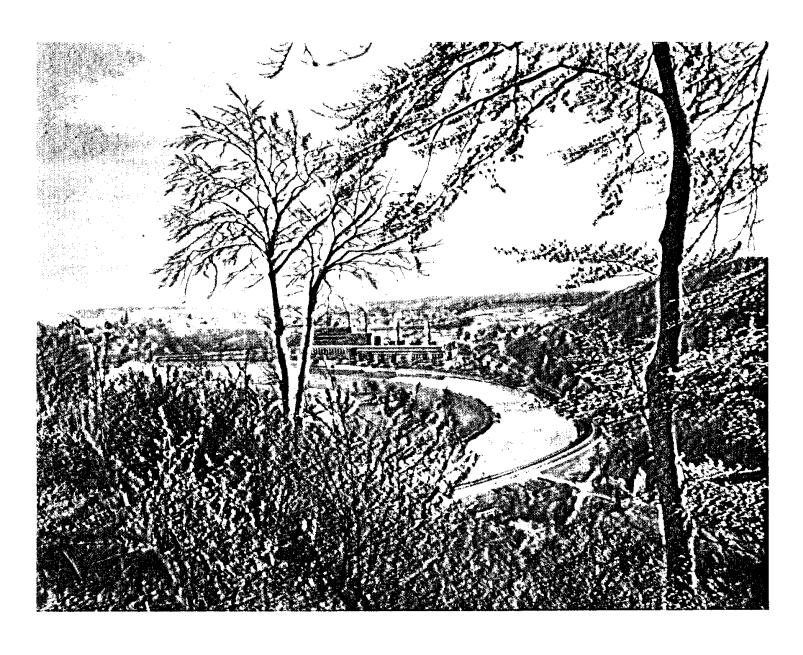
Alter Stollen, der heute noch in Betrieb ist An Old Shaft still in use today Entrée d'une ancienne mine, encore en activité

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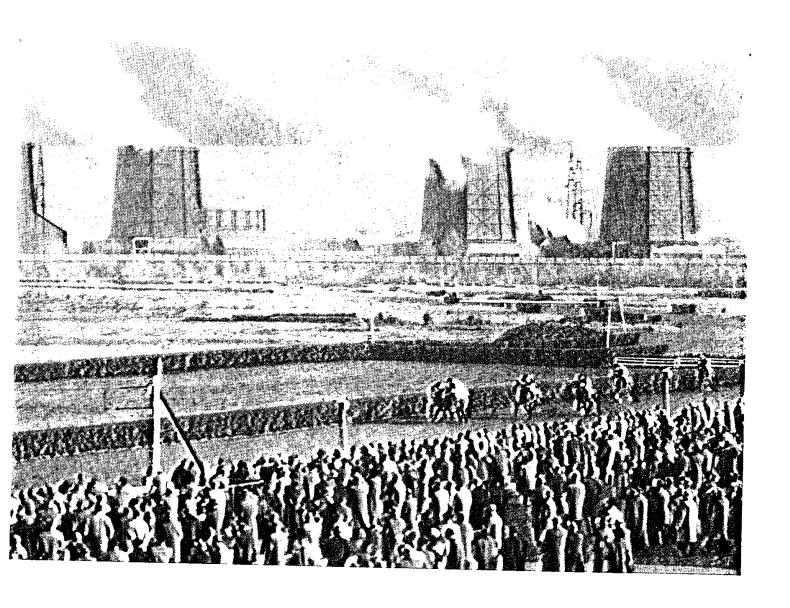
Hattingen in the Ruhr Valley

Dans la vallée de la Ruhr, près de Hattingen



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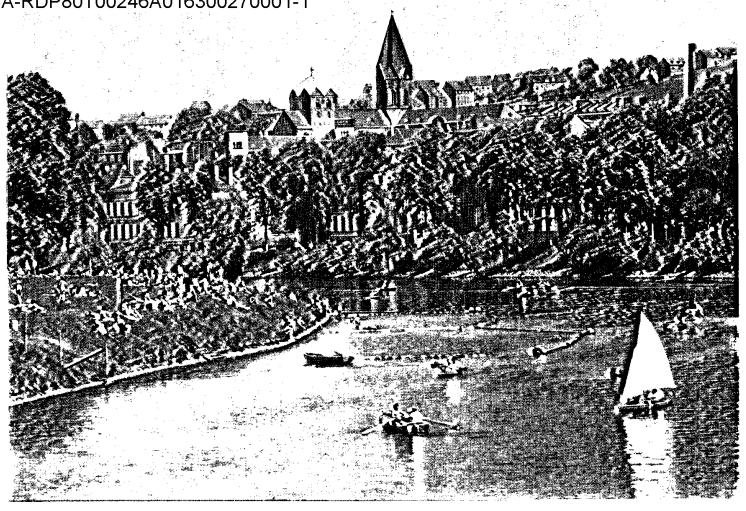
Piste de courses hippiques Horst-Emscher



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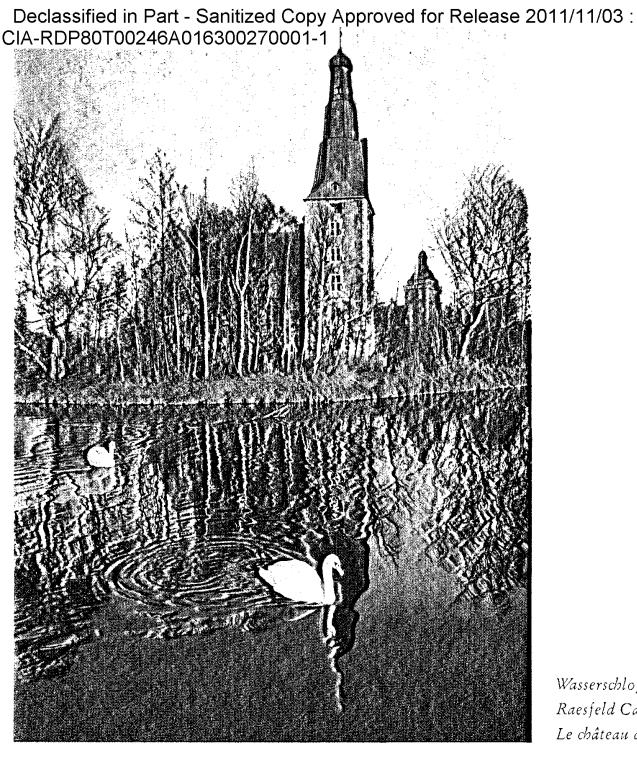
Im Revier In the Heart of the Industrial Area Dans le pays des mines



Die Ruhr bei Essen-Werden The River Ruhr at Essen-Werden La Ruhr près de Essen-Werden

Wasserschloß Lembeck Lembeck Castle Le château de Lembeck





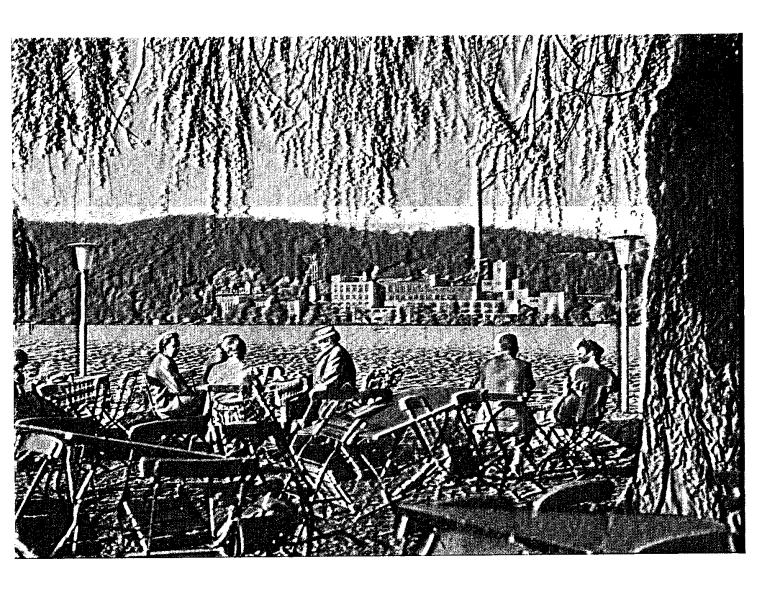
Wasserschloß Raesfeld Raesfeld Castle Le château de Raesfeld

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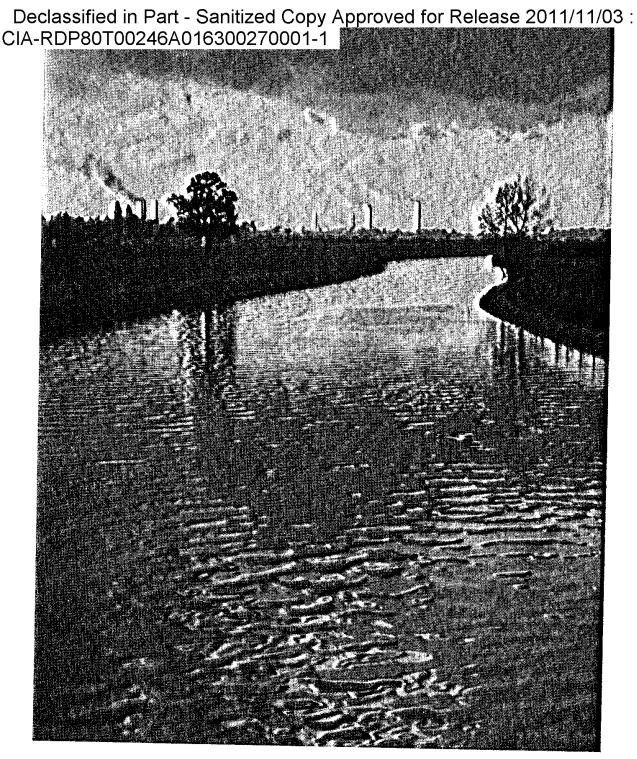
Ann Baldeneysee

Lake Baldeney

Au bord du lac Baldeney



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forty-hour working-week, the problem of so-called "creative leisure time" obtrudes itself in discussions on social science. What does the average individual do with this spare time, with his long week-end? Efforts are now being made in this connection to let the working man share in the culture of the world to a greater extent than has formerly been the case. Adult education is fostered and promoted particularly intensively in the Ruhr Valley. New methods have been adopted and they have already proved extremely successful. In Dortmund, for example, one of the pavilions on the site of the West German Horticultural Show of 1959 has been converted into a library; those who would like to read a book on one of the seats out in the open in these pleasant surroundings are thus encouraged to do so. The syllabus under the university extension system ranges from special vocational courses to an introduction to abstract art.

But the best example of these attempts to encourage the working man to increase his knowledge and, at the same time, "to elevate him spiritually" (Theodor Heuss) is no doubt provided by the history of the Ruhr Festival. The miners of the "Ewald/König Ludwig" mine in Recklinghausen little dreamt in that famine winter of 1946 that their decision to send the State Opera House in Hamburg an extra supply of coal to enable rehearsals and performances to continue would lead to the idea of a festival of the highest artistic standard. On the part of the miners it was merely a spontaneous measure to help the actors, and it was not until the Hamburg ensemble, in order to express their gratitude, gave a number of evening performances in the following summer

Abend an der Lippe
Evening on the River Lippe
La rivière, Lippe, le soir

for the miners that the latter expressed their desire for more. Today, the Ruhr Festivals are part of the culture of Europe. As Theodor Heuss once said, "They are not only a gift to the individual who can attend them, but also a barometer of what can be expected of the German people as well as of what is expected by this people – if it is presented in a worthy form. For the fact that people attend the Festivals is, after all, a sign of their susceptibility to great and eternal values."

Such barometers of the cultural interests of the population have been in evidence in the Ruhr district on other occasions. In this connection one need only recall the famous Folkwang Museum in Essen. Thanks to the initiative of the Chief Mayor of Essen at that time, Hans Luther, who later became Reichs Chancellor, the collection of the well-known Hagen patron of art, Wilhelm Osthaus, was in 1922 secured for the Ruhr metropolis and in the years that followed was augmented until it became a gallery of international renown. The art purge of the Nazi era resulted in the loss of many irreplaceable works, and during the air raids of World War II this museum was completely destroyed. Today it stands on its former site as a fine, modern edifice, constructed in the form of a pavilion which encloses two courtyards. The collections housed here and the museum itself today provide an almost complete picture of the development of modern art in our century, - an art which, like a sensitive seismograph, reveals the hidden trends of the technical age in which we are now living and which has determined the character and appearance of this industrial district.

Or, to quote another example, – the Bochum Theatre, which was created by and represented the life-work of that talented theatrical director, Saladin Schmitt. His Shakespeare and Grabbe productions established a tradition where hitherto there had been none, and he instilled a permanent love of the

theatre into those who had previously shown practically no interest whatever in this genre. This theatre, too, was rebuilt after the war, and is famed for its performances far beyond the borders of the Ruhr district.

Something like a competition of the muses has ensued between the individual communities in the Ruhr Valley. Gelsenkirchen, for instance, has erected a modern theatre with bold lines, a lofty, square edifice of steel and glass; a further building project is contemplated, which is to house the people's university and a library, and which, together with the theatre, is to constitute the cultural centre of this town. In Essen the plans designed by the Finnish architect Aalto for a huge opera house are at present being elaborated prior to carrying out this project. A similar project has been passed by Dortmund's municipal council. The recently erected libraries in Essen and Dortmund are amongst the most modern edifices in the world. The orchestras and theatrical ensembles have long since overcome the odium of a "provincial" level. In order to enjoy a big concert or a theatre performance it is no longer necessary to undertake a journey to Düsseldorf or Cologne. What is still missing in this rising cultural life is, of course, the intellectual centre of a university or college of technology, but these will undoubtedly soon be forthcoming. Incidentally, the Vatican has acknowledged the special significance of this industrial district by founding a Ruhr bishopric in Essen.

To confine oneself solely to an account of the industrial areas and towns of the Ruhr Valley would be equivalent to painting a onesided picture of this region. Those who pass through the Ruhr Valley by train only know half of it, for there is not only a "black" but also a "green" side to it. On the outskirts of the industrial centres, with their lofty chimney-stacks, blast-furnaces and shafts, there are beautiful, unspoilt woods, meadows and heaths. In the towns, parks and green spaces are laid out, and here they seem to be cared for even

more lovingly than elsewhere. These green spaces are the "lungs" of the industrial district. At the week-ends, the roads leading out of the towns are crowded with columns of cars, miles long. Families, large and small, betake themselves to the banks of the Ruhr, to the hills of the Sauerland and to the Münsterland in the north. White sails gleam on the vast expanse of Lake Baldeney on the Ruhr, on the Wedau at Duisburg, or on Lake Haltern in the north; the commands of the coxswains resound across the water, and the open-air swimming pools are packed to overflowing.

Sport in general is written with a capital letter in the Ruhr Valley. "King Football" wields his sceptre supreme, and the matches played by the blue and white "Pitmen" of Schalke, the yellow and black "Borussians" of the Dortmund horse-market, or the "Red-Whites" of Essen-Bergeborbeck are discussed by fans in the train or during their lunch-hour for the whole of the next week. Horse-racing, too, has thousands of supporters. True, the racecourses at Horst-Emscher or Mülheim-Raffelberg are not a meeting-place of smart society as, say, Longchamps or Epsom. Not the grey top-hat or the latest creation by Dior predominate here, but the "little man", who, after careful consideration and having weighed all the odds, decides to try his luck and risk a bet.

After the match or the races, the next port of call is the "local" round the corner. Here, victory or defeat are swilled down with one, or, better still, with several "layers", which in this part of the world consist of a sharp "clear" schnaps to "warm up" and a cool Pilsen beer. Malicious tongues even go so far as to affirm that in the Ruhr Valley from one "pub" you can always see the next!

The Ruhr Valley has many faces. It is a landscape that is alive in the truest sense and subjected to constant changes. After the tragedy of World War II it seemed to be a stony desert doomed to death. But the will to live and the untiring industriousness of every class of its population, from the entrepreneur

to the coal-heaver, from the engineer to the labourer, helped it to rise up again like a phoenix out of the ashes. And its face has become more modern, one might say more "American". Side by side with the steel structures of industry, the skyscrapers of the big concerns, administrative authorities and banks are today shooting up in the heart of the towns. Huge roads are being constructed in order to cope with the ever-increasing traffic, and new industrial and housing centres are being erected. But in spite of its modern face, tradition is still fostered, even by the relatively young industrial communities. Side by side with the new, one finds the old, – carefully cherished traces of the historic past. In the very heart of the noisy city of Essen stands its venerable Minster. The red, gold and blue of the altar-pieces by Conrad of Soest gleam in the dim light of the interior of St. Mary's Church in Dortmund. In Mülheim, Broich Castle still guards the Ruhr ford of the "Hellweg" as it did 900 years ago, and the servants' wing of Horst Castle which still stands reflects some of the former splendour of this "Westphalian Heidelberg".

But the Ruhr Valley presents its most impressive and spectacular appearance when seen from a plane by night. Beneath us, lights and neon signs glitter and sparkle, red flames leap up out of the blast-furnaces, the Bessemer lamps shed a cascade of fireworks, the fiery lava of the red-hot coke glows in the chambers of the coking furnaces, and, studded with thousands of lamps like bright stars, the structures of the "cracking" and distillation plants stand out like illuminated towers, – no wonder the inhabitants call it "Little Manhattan"! This nightly panorama of the industrial landscape, which is never still but throbs with the hammering rhythm of work day and night, has a fascinating and majestic beauty. Slowly, this vulcanic spectacle of fire and light dips below the horizon behind us, as we glide on into the darkness which shrouds the slumbering countryside.

THE PLATES

View of Foundries and Factories from the Rhine Bridge

The Rhine, the most important waterway in Europe, is practically indispensable to the industrial district as a transport route for its raw materials and products. Between Basle and Rotterdam there is a steady stream of barges and tugs in both directions on this internationalized river. The figure of 60 million tons, which was what the goods traffic at the German-Dutch frontier station Emmerich alone amounted to in 1957, gives one an idea of the economic importance of shipping on the Rhine.

Duisburg Port

Next to Essen and Dortmund, Duisburg is the third largest town in the Ruhr Valley and the most important junction of inland shipping in Germany. It is here that the canal network of West and Central Germany is linked up with the inter-

national waterway of the Rhine by means of the Rhine-Herne Canal, one of the main arteries of the Ruhr district. The twenty harbour basins of Duisburg-Ruhrort, with their quayside frontage of almost 30 miles, together with the plants of Homberg and Rheinhausen on the left bank of the Rhine, constitute the largest inland port in Europe with a trans-shipment of goods which even exceeds that of some seaports. In 1957, for instance, 19.2 million tons of goods were shipped to Duisburg and 10.6 million tons were forwarded from Duisburg Port.

The Ore Harbour

The German ore reserves are by no means large enough to meet the needs of the foundries on the Rhine and the Ruhr. In addition to valuable ores, other rare metals used in alloys, such as nickel, chromium and wolfram, etc., are required for the production of high-grade special

steels. A constant supply of these ores and metals from the Kirunavaara mines in Sweden, from Russia and from the overseas mines in North Africa, Asia, South and North America thus passes along the Lower Rhine and the Dortmund-Ems Canal. The big foundries have their own ore harbours, complete with installations for rapid unloading and sorting of the various types of ores.

Here we see the Schwelgern ore harbour, which with an annual trans-shipment of 11 million tons is the largest privately owned harbour in Europe and the second largest inland port in Europe. In the foreground, a modern crane and transport unit.

Power Station and Modern Colliery

Coal and electricity have formed a partnership in the Ruhr district. Without the supply of electricity which feeds them, the electric machines in the pits would be useless, the cages would stand still and the shafts would be flooded. In addition to what they require for their own needs, the power stations of the collieries also generate electricity which is needed for other purposes elsewhere and is conveyed by an extensive network of overhead conductors. In this way the profitableness of

the entire concern is increased. And an important factor in this respect is the use of coal of poor quality which could not be used for coking or fuelling purposes.

Petroleum Refinery on the Rhine-Herne Canal

Increasing mechanization and the fact that many branches of industry have in recent years begun to use oil instead of coal for fuelling, have led to an increase in the production of oil all over the world. Even the industrial concerns in the Ruhr Valley which originally confined themselves to the hydrogenation process (the liquefaction of coal to obtain crude oils) have since the end of the war switched over to oil refining. Thanks to the recently constructed pipelines which link them up with the oil harbours of Rotterdam and Wilhelmshaven, these concerns now already supply one-third of West Germany's oil needs. The coolingtowers in the background indicate the proximity of a power station and a large colliery.

A Cooling-Tower

Cooling-towers of wood, steel or concrete, whose typical structures are a com-

mon feature of the sites of collieries and foundries, are used to re-cool the water heated by steam engines and turbines. As a rule they indicate the proximity of a power station. Their interior consists of an intricate structure of wooden laths through which the water drips and is gradually cooled by the constant current of air that is supplied. When in operation, the cooling-towers emit a hazy cloud of steam.

Loading Ore and Coal

A typical scene in the industrial harbour of Alsum, where the ships are lightered by means of huge conveyor cranes and loading-bridges.

A distinction is made between "dry" and "wet" loading. The loading platforms of a "dry" colliery are linked up with the railway network, whereas in the case of a "wet" colliery, transport of the coal is effected mainly by waterways. At the moment, the railways have the lead! More than 60 per cent of the entire goods forwarded by the Federal Railway from the Ruhr district consist of the products of the coal mining industry. Day and night, huge goods trains convey the "black diamonds" to all parts of the globe.

A Farm-House in the Midst of Industry

Between Duisburg and Hamm, between the Ruhr and the Lippe, in fact anywhere in the Ruhr Valley, one may suddenly come across a farm-house with a slate roof and built in the half-timbered style of this region, in the midst of huge industrial plants. Very often old-established farming families still live here and till their acres as their ancestors did a hundred or more years ago. Many of these "Kotten" or small holdings have been bought by the big industrial concerns nearby, and sooner or later they will have to make way for the extension of an industrial site or the construction of a road.

A Colliery Plant

The outward appearance of a modern colliery plant is determined entirely by economic expediency. The power station and the plants for sorting, grading and washing the coal, as well as the loading platforms, which are linked up with the railways and canals, are all grouped round the hoisting shafts. Large collieries, such as the one shown in this picture, have their own coking plant, as well as distilling plants where tar, ammonia and benzene are obtained, or factories which make briquets.

Sunset over Duisburg Port

The modern industrial landscape is an artificial one, created by the hand of man; forests and fields have had to make way for the steel structures of foundries and shafts, for smoking chimney-stacks and an intricate web of railway lines. Instead of the green and blue hues of Nature, the colours which now predominate are grey, black and red, and they are particularly intense when the sun begins to set and the sky radiates a pale yellow light behind a curtain of smoke and mist. It is then that this otherwise uninspiring industrial landscape assumes a strange, fierce beauty of its own.

Tap-Hole in a Blast-Furnace

Man seems like a tiny dwarf by the side of the huge blast-furnace, in whose mighty bowels pig-iron is obtained from iron ore by chemical process. At intervals of about four to six hours, "tapping", the process of drawing the pig-iron and the slag alternatively, is carried out. The whitish avalanche of molten pig-iron gushes out of the tap-hole with a fierce gurgle and a volley of sparks, and the heat is so terrific that it almost burns one's breath. With lightning speed and

within a couple of seconds, the pig-iron has to be directed along the roughly dug channels of sand into the buckets, in which it is then conveyed to the steel works for further processing.

More than 2,000 tons of pig-iron are obtained from a blast-furnace per day. One of the most modern blast-furnaces in the world is located in a foundry in Duisburg-Hamborn. It has a diameter of 27 feet.

Scooping Test for Molten Electric Steel

"Scooping tests" are taken of the molten steel throughout the entire process of making this metal. These tests are poured into small receptacles and sent to the works laboratory, where they are immediately tested for quality. The results are then equally promptly reported to the men in the blast-furnace. Thus, the output of a foundry depends to a very considerable extent on the precise cooperation and co-ordination of the various groups of workers. Not only does this type of work bring a great deal of responsibility with it, but it also makes great physical demands on the workers. The men working at the blast-furnaces, for instance, drink anything up to 14 pints of liquid during one shift in order

to make up for the huge amount of moisture which their body loses as a result of the terrific heat.

The Production of High-Grade Steels

All the impurities in the pig-iron, in particular carbon and phosphorus, are removed in the steel works, and here it is transformed into malleable steel. Out of a huge converter, suspended from a travelling crane, the hot, white, molten steel, which has a temperature of about 1,800 degrees centigrade, flows into the so-called "chilling forms" or moulds for casting slabs, blooms and ingots. The cleaning and transformation of the pigiron, during which the carbon flares up with a huge flame and burns away with a terrific din, is, visually and acoustically, one of the most impressive processes in a foundry.

According to its cast, the solid steel is designated either as an ingot or a bloom. These ingots and blooms are then rolled, hammered or pressed into various shapes by further heat processes.

A Foundry by Night

Foundries are the witches' cauldrons of our technical age; by day, and still more so by night, they are a highly impressive experience for the visitor. Some of the modern blast-furnaces are over 90 feet high. By means of an inclined hoist they are fed from the top with ore, coke and the "additions". Cylindrical Cowper's stoves keep the current of air heated at a sufficiently high temperature. These blast-furnace giants have a terrific appetite; they have to be fed with 2,000 tons of ore and 1,400 tons of coke, i. e. the quantity contained in five long goods trains, in order to yield a daily output of 1,400 tons of crude steel.

A Rolling Mill

In the rolling mills the steel is transformed into sheets, strips, girders, slabs or rails. This picture shows the process of rolling steel ingots into sheet panels. A red-hot sheet of steel has just left the rolling stands and now moves along the roller gear bed to the next stage in the process. The slight haze of steam is due to the fact that water is constantly sprinkled on the rollers to cool them.

One of the largest and most modern plate rolling mills in Europe, which has been in operation for a couple of years, is located in the Ruhr Valley. Here, steel ingots, weighing up to 40 tons, are rolled into plates by rollers with a pressure of

up to 4,000 tons. The processes in this quarto rolling mill are for the most part directed automatically and by electricity. The huge hall is practically deserted. High up above the roller gear bed and away from the heat, the two men who operate the rollers sit in the air-conditioned glass control-tower, watch the rolling-process on a television screen, and regulate its progress by merely moving a lever. It is no longer physical strength but mental concentration that is the most important factor.

A Chemical Works with Outdoor Apparatuses

Like the iron and steel industry, the chemical industry, too, plays a leading part in the economic life of the Ruhr Valley. Raw materials for plastics are, for instance, obtained here from by-products of the petroleum industry. Synthetic products from gas is the motto of the chemical industry in the Ruhr Valley.

A network of pipes stretching for miles and columns of tanks and boilers are the characteristic features of a modern chemical works. Most of the chemical transformation processes, unlike those in the mining and iron industry, are invisible to the eye of the beholder and are supervised and controlled by precision instru-

ments. A bird's-eye view of these plants, which have been designed and constructed in such a way as to ensure the greatest utility possible, reveals a picture of peculiar and severely practical beauty, which is probably just as characteristic of our age as the ornate buildings of former days were for the sense of beauty of our ancestors.

Synthetic Rubber Factory

The cokeries provide the chemical industry of the Ruhr Valley with most of the basic materials which it needs. The use of exhaust gases, for instance, is an example of the system of industrial coordination, which even turns waste products to economic advantage. From coking gas and natural gas, for example, acetylene, one of the basic materials needed for the production of buna synthetic rubber, is obtained. The chemical process of making synthetic rubber no doubt seems as mysterious to the layman as did the alchemy of the Middle Ages to the uninitiated, though the plants in which this process is carried out by no means resemble the laboratories of the alchemists. These plants, too, are typical of modern industrial architecture inasmuch as their characteristic feature is a certain, almost "abstract" beauty.

Incidentally, 120,000 tons of buna synthetic rubber are manufactured by 400 persons. Half of this output is used in the production of motor tires, for this types of synthetic rubber is as hard as steel. Automatically controlled plants in the synthetic rubber factories replace the labour of several thousand plantation hands.

A Street in the Industrial Area

Somewhere between Hamm and Duisburg, a road which has numerous bends crosses the tracks of a pit-railway. In the background we can see the typical structures of a colliery, – the gasometer, cooling-tower, hoisting shaft and chimney-stacks. The gates at the level crossing are open, – for a change – at least, from the point of view of the pedestrian and motorist. In the Ruhr Valley, coal and iron normally have priority on the roads and in traffic; hence the miner on his way to work is more likely to see the gates at the level crossings closed, rather than open.

A Park in Dortmund

For decades, those responsible for town-planning in the large Ruhr communities have been endeavouring to relieve the monotony of the densely populated industrial and housing centres by "green spaces", in order to provide the inhabitants in these areas with a spot where they can seek recreation close to their dwellings and place of work. Two such ideal "green spaces" are the Gruga Park in Essen and the site of the 1959 West German Horticultural Show in Dortmund. Laid out on the most modern lines, this park is dominated by a television tower, 650 feet high; from the slowly revolving café on its roof there is a fine view of the town and the imposing premises of one of the large foundries.

Lake Haltern

Lake Haltern, a vast sheet of water, was formed by damming up the River Stever close to its confluence with the Lippe. In the spring and the autumn, rare water-fowls from the far north, including herons and whistling-swans, rest here during their migrations. To the north of the lake there are the woods and heaths of the Borken Hills, a favourite haunt of gliding fans. Westrupp Heath in the south, which in its austere beauty reminds one of the Lüneburg Heath, attracts thousands of Nature-lovers at the weekends. And when the weather is fine the

bathing-beaches and the cafés along the shores of Lake Haltern are packed to overflowing.

The Old Town of Blankenstein in the Ruhr Valley

The picturesque town of Blankenstein, with its fine, old half-timbered houses, has to a large extent retained the character of a small rural town, which so many of its larger neighbours lost during the rapid industrialization. In the course of centuries this little town sprang up round the castle, which today dominates Blankenstein as a romantic ruin. In the Middle Ages Blankenstein Castle was erected as a military base high up above the Ruhr Valley and played an important part in the feuds between the Counts of the Mark and the belligerent Archbishops of Cologne.

An Old Shaft still in use today

Along the Ruhr and in its side-valleys, there are still a few small collieries which are worked in exactly the same way as they were two hundred years ago. Anthracite, much sought after on account of its high heat value, is chiefly mined here. In these miniature collieries, which in many

cases have been in the possession of the same family for generations, the problems of mechanization and rationalization by no means play as important a part as they do in the modern collieries. The coal is usually close to the surface; hence, even primitive methods of raising it still prove fairly profitable.

Hattingen in the Ruhr Valley

Seventy per cent of the water supply of this industrial region is obtained from the River Ruhr, 142 miles in length, or, to be more precise, from the reservoirs in the upper Sauerland and on the upper course of the Ruhr. Here and there, on the slopes overlooking the river, there are still to be seen the romantic ruins of old castles, as, for instance, Hohensy Castle or Vomarstein Castle, which bear witness to the grim feuds between the lords of the Middle Ages. Up to the 19th century, shipping on the Ruhr flourished, for it was an indispensable means of transport for the mining industry in those days; but with the construction of the railway it fell into decay. The idyllic landscape along the Ruhr has to a large extent been preserved, even in those places where factory sites have extended as far as its banks.

The Racecourse at Horst-Emscher

The racecourse at Horst-Emscher. which was laid out sixty years ago, occupies a leading position amongst the many steeplechase courses and racecourses in West Germany. Since the war the famous Henckel Races, the first of the three standard trials for three-year olds, have been held here. Other notable events of the turf which take place at Horst-Emscher are the "Horst Criterion" for two-year olds and the "Big Prize of Gelsenkirchen". On such days, the racecourse, with the velvety green turf, with thousands of happy spectators, and with the collieries and factories as a background, presents an imposing spectacle.

In the Heart of the Industrial Area

The problem of the adolescents in large towns is as acute in the Ruhr district as it is elsewhere in the world. Attempts are made to meet their needs by educational and welfare measures. These include the erection of modern schools, an adequate number of day-nurseries and kindergartens for small children, swimming baths, recreation and sports grounds in the "green belts" of the large towns, as well as public health and welfare measures and the institution of holiday camps

which are actively supported by the municipal authorities, the churches, the trade unions and the industrial concerns alike.

The River Ruhr at Essen-Werden

At the western extremity of Lake Baldeney, the small old town of Werden slopes down to the Ruhr. The late baroque buildings of the former Benedictine Abbey today house the Folkwang school of dramatic art, music and dancing, which was founded in 1927 and since then has become famous far beyond the borders of the Ruhr district. The town and the Abbey are dominated by the spires of St. Liudger's, one of the most beautiful late romanesque churches between the Rhine and the Weser. A shrine in the crypt contains the sacred relics of St. Liudger.

Lembeck Castle

The Münsterland, which borders on the Ruhr industrial district in the north, abounds in castles which have been erected in lakes. One of the most beautiful of them is Lembeck Castle, which was built by the Count of Westerholt at the end of the 17th century and is surrounded by a picturesque park. This spacious edifice consists of two tracts, the outer bailey and the residential hall, both of which

are divided symetrically by a middle axis. The "Great Hall", with its fine wainscotting, ornate stucco ceiling and marble fireplaces, is the scene of chamber music concerts, which are always well attended, on summer evenings.

Raesfeld Castle

The unusual three-tiered baroque spire of its corner-tower has made this castle a landmark which dominates the country-side around Borken. Originally a strong-hold, it was converted into a residential castle by the "Westphalian Wallenstein", Field Marshal to the Emperor and Reichs Count Alexander von Velen, and after the Thirty Years' War he lived here in princely style. True, those glorious days are long since past and the castle has lost much of its ancient splendour, but since 1950 the Artisans' Council has very tastefully restored the rooms that survived the ravages of time.

Lake Baldeney

Lake Baldeney near Essen was completed in 1938 as a dam site of the Ruhr. Five and a half miles long and measuring a distance of a quarter of a mile at its widest point, it is a favourite haunt of

aquatics enthusiasts from the Ruhr metropolis nearby. The pedestrian, too, will find many pleasant walks along its beautifully laid out banks, which are for the most part closed to motor traffic. From the numerous cafés on its banks and on the surrounding wooded slopes there is a fine view of the lake, which fits into the landscape so harmoniously that one could almost imagine that it is a natural lake, were it not for a few small collieries on its banks to remind one of the proximity of the industrial district.

Evening on the River Lippe

From its source in the Lippe Forest, the river flows 153 miles before it joins the Rhine at the small old town of Wesel, which was once a fortress. Its lower course now forms the northern boundary of the Ruhr district. Here it has lost much of the natural character which it has to some extent managed to retain over wide stretches of its upper course through the woods and fields of the Lippeland. Unlike the Ruhr, the Lippe cannot be used to supply the district with drinking-water on account of its high salt content, but, to make up for this, it provides countless industrial plants and a major part of the extensive network of canals with water.

PANORAMA-BOOKS

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EDITOR HANS ANDERMANN

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